DATA SHEET

3COM® MSR 20 SERIES MULTI-SERVICE ROUTERS

Economical, full-featured multi-service routers designed for converged WAN traffic at enterprise branch locations

from top: 3Com MSR 20-20, MSR 20-21, MSR 20-40

OVERVIEW

The network is a critical component of a successful business, helping organizations expand into new markets, collaborate with customers, partners and employees and efficiently manage communications. It is imperative that the network enable these processes and communications reliably and cost effectively, while providing protection from potentially disruptive, expensive and reputation damaging security breaches.

With their modular design, 3Com® MSR 20 Series Multi-Service Routers deliver unmatched flexibility in satisfying customer business requirements, while reducing complexity, simplifying management and increasing control, providing lasting investment protection, and reducing capital and operating expenses.

3Com Multi-Service Routers enable an agile and flexible network infrastructure, with the ability to quickly adapt to changing business requirements, while delivering integrated, concurrent services on a single, easy-to-manage platform.

The MSR 20 Series consists of three modular chassis—the MSR 20-20, 20-21 and 20-40—delivering:

- unparalleled secure, converged networking through the use of embedded and integrated hardware-based encryption and voice processing capabilities;
- reliable, scalable, high-performance WAN and LAN connectivity in a single platform; and,
- a comprehensive portfolio of interface and module options for LAN, WAN and voice communications.

KEY BENEFITS

CONVERGED COMMUNICATIONS SUPPORT

In addition to a comprehensive portfolio of voice gateway interfaces, the MSR 20 Series delivers services up to wirespeed T1/E1 rates. The MSR 20-40 also offers optional embedded Voice Processing Modules (VPM) and Voice Co-Processing Modules (VCPM), which enable advanced voice processing for high-performance analog and digital voice services without compromising performance of the other modules or of the router.

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KEY BENEFITS (CONTINUED)

The VCPM provides local Time Division Multiplexing (TDM) functions while the VPM serves as a Digital Signal Processor (DSP) to support IP voice communication over the network. Scalable voice configurations and higher line density are supported through the use of multiple VPMs, based on the number of voice lines required. VPMs and VCPMs reside on a centralized, embedded multi-service processor module, conserving router I/O slots for maximum port density and configuration flexibility. Fully-populated, the MSR 20-40 can accommodate as many as 60 digital voice channels.

Building on 3Com's commitment to open standards, the MSR 20 Series supports common industry voice protocols including Session Initiation Protocol (SIP) and H.323.

ADVANCED SECURITY AND CONTROL

To help protect sensitive information against unauthorized access, the MSR 20 Series integrates a number of comprehensive security services and access management capabilities, including:

- Hardware-based Standard Network Data Encryption (SNDE) and Advanced Network Data Encryption (ANDE) embedded via Enhanced Services Modules (ESM) slots;
- Encryption acceleration capabilities that ensure security without compromising network throughput as performance needs increase;
- Progressive encryption methods such as DES and 3DES;
- Additional security features such as advanced firewall, L2TP, MPLS and IPSec VPNs. SSHv2 and SNMPv3 protect router management sessions.

As with the voice modules in the MSR 20-40, ESM modules reside on the centralized multi-service processing module of the MSR 20 Series, conserving router I/O slots for maximum configuration flexibility, port density and routing performance.

INTEGRATED AND FLEXIBLE SERVICES ARCHITECTURE

The MSR 20 Series is modular in design and delivers integrated, concurrent services on a single platform, creating operational efficiencies, reducing costs and maximizing precious rack space and power.

With a comprehensive set of integrated modules that deliver voice and data interfaces, routing and switching capabilities, the MSR 20 has the capacity to deliver the functionality of multiple devices and appliances in a single platform.

HIGH DENSITY ROUTING AND SWITCHING PERFORMANCE

When evaluating multi-service routers, performance, port density and configuration flexibility are all key considerations. The MSR 20 Series outperforms competing multi-service routers, delivering packet forwarding performance up to 160 Kpps and encryption performance of up to 100 Mbps.

With a comprehensive portfolio of WAN and LAN interface modules, the MSR 20 delivers concurrent services up to T1/E1 rates, in addition to Fast Ethernet and Gigabit Ethernet LAN connectivity. Smart Interface Card (SIC) options include high-density Layer 2 10/100 Mbps Ethernet switching cards for integrated switching and routing in a single platform, simplifying infrastructure deployments for branch and regional offices.

RESILIENCE AND REDUNDANCY FOR MAXIMUM UPTIME

The MSR 20 Series is designed for the highest levels of availability and resiliency to ensure continuous operation and to meet the requirements of real-time applications such as VoIP and live and on-demand video.

Additional reliability capabilities include configuration rollback, Multilink PPP and Multilink Frame Relay and VRRP.

NEXT-GENERATION ROUTING CAPABILITIES

The evolution to next generation networks based on IPv6 is imminent; however, organizations worldwide will follow different paths as they transition from today's IPv4 networks. The MSR 20 Series offers comprehensive IPv4 and IPv6 routing capabilities to accommodate a variety of migration approaches such as IPv4 "islands" on IPv6 networks, IPv6 "islands" on IPv4 networks and interconnection (with protocol translation) of IPv6 and IPv4 networks, enabling a wide array of network design possibilities.

Through a powerful suite of MPLS features, including MPLS TE (Traffic Engineering) and Fast Re-Route (FRR), the MSR 20 Series maximizes the benefit of a MPLS backbone to provide bandwidth optimization, strict QoS guarantees for the transport of critical traffic and the ability to quickly re-route traffic following network failures.

KEY BENEFITS (CONTINUED)

FULLY FEATURED ROUTING PLATFORM

Unlike competitive offerings, the MSR 20 Series comes equipped with a complete routing and security suite, a robust application set and all required operating memory, eliminating the need for costly and inconvenient upgrades. Specifically, the MSR 20 Series includes:

- Open, industry standards-based routing capabilities such as: IP and IPX routing; Open Shortest Path First (OSPF), RIP versions 1, 2 and 3; integrated intermediate system to intermediate system (IS-IS); multicast routing; QoS; IEEE 802.1Q VLANs; and IGMP versions 1, 2 and 3;
- Built-in CompactFlash and USB slots that hold multiple configuration files and operating systems for recovery purposes; and,
- A full complement of memory, including up to 384 Mb of SDRAM and 256 Mb of CompactFlash memory to support dual software images.

SOPHISTICATED MANAGEMENT

Network infrastructure deployments and upgrades can be costly and time-consuming for organizations with several branch offices or remote locations. The MSR 20 Series offers an intuitive, easy-to-use CLI function that can be securely accessed locally or remotely for comprehensive configuration and management, with additional features that provide an extensive set of management capabilities.

For example, the MSR 20 Series is compatible with industry-standard NetFlow, an efficient and powerful technique for collecting IP traffic information, including information about network users and applications, peak usage times and traffic volumes. The MSR 20 Series is also fully manageable via the 3Com Enterprise Management Suite (EMS), a powerful graphical application with advanced remote diagnostics and network management capabilities. With capabilities such as QoS, systems infrastructure and voice applications, EMS ensures rapid deployments of IP telephony systems and robust support of both the data and voice components of a converged network.

FEATURE HIGHLIGHTS

- Integrated routing and switching, and remote management capabilities simplify managed services for remote locations and branch offices.
- Advanced Multi-Service Architecture delivers enhanced, integrated data, voice and security services.
- Embedded voice processing functionality delivers advanced, high-performance analog and digital voice capabilities for connections to centralized IP PBX and local public switched telephone network (PSTN).
- Versatile modular chassis supports a full portfolio of WAN, LAN and voice interfaces. Backward compatibility with existing SIC interfaces enhances investment protection and provides maximum configuration flexibility.
- Advanced, embedded security functions with multiple hardware encryption options ensure the highest levels of security without sacrificing throughput performance.
- Standards-based design ensures complete interoperability in multi-vendor environments, including Cisco.
- Enhanced performance, security and reliability make the MSR 20 Series an affordable platform for delivering converged networks, including data, voice and video.
- Comprehensive IPv6 and IPv4 routing functionality ensures seamless migration.
- Engineered by H3C, a 3Com company.

SPECIFICATIONS

All information in this section is relevant to the MSR 20-20, 20-21 and 20-40 unless stated otherwise.

MIM = Multi-function Interface Module
SIC = Smart Interface Controller
DSIC = Double-width Smart Interface Controller

SLOT AND PORT CAPACITY

MSR 20-20
SIC slots: 2 single-width

1 Enhanced Service Module (ESM) slot, for advanced or standard encryption accelerators

2 10/100 Ethernet ports

1 console port

1 USB 1.1 port
1 auxiliary port

MSR 20-21
SIC slots: 2 single-width

1 ESM slot, for advanced or standard encryption accelerators

10 10/100 Ethernet ports

1 console port

1 USB 1.1 port
1 auxiliary port

MSR 20-40
SIC slots:

› 4 single-width or
› 2 single-width and 1 double-width or
› 2 double-width

2 ESM slots, for advanced or standard encryption accelerators

2 Voice Processor Module (VPM) slots, for optional 8-, 16-, 24- or 32-channel processors

1 Voice Co-Processor Module (VCPM) slot

2 10/100 Ethernet ports

1 console port

2 USB 1.1 ports
1 auxiliary port

PROCESSORS

Power PC 400 MHz

Voice Processing Module
8 voice channels

Enhanced Service Module
Standard or advanced encryption

SYSTEM MEMORY

4 Mb boot ROM

256 Mb (default) to 384 Mb DDR SDRAM

256 Mb CompactFlash

POWER SUPPLY

AC Power
100 to 240 VAC, 50/60 Hz

210W maximum

PHYSICAL SPECIFICATIONS

MSR 20-20
Height: 44.2 mm (1.7 in)
Width: 360.0 mm (17.2 in)
Depth: 287.1 mm (11.3 in)
Weight: 3.0 kg (6.6 lb)

MSR 20-21
Height: 44.2 mm (1.7 in)
Width: 360.0 mm (17.2 in)
Depth: 287.1 mm (11.3 in)
Weight: 3.5 kg (7.7 lb)

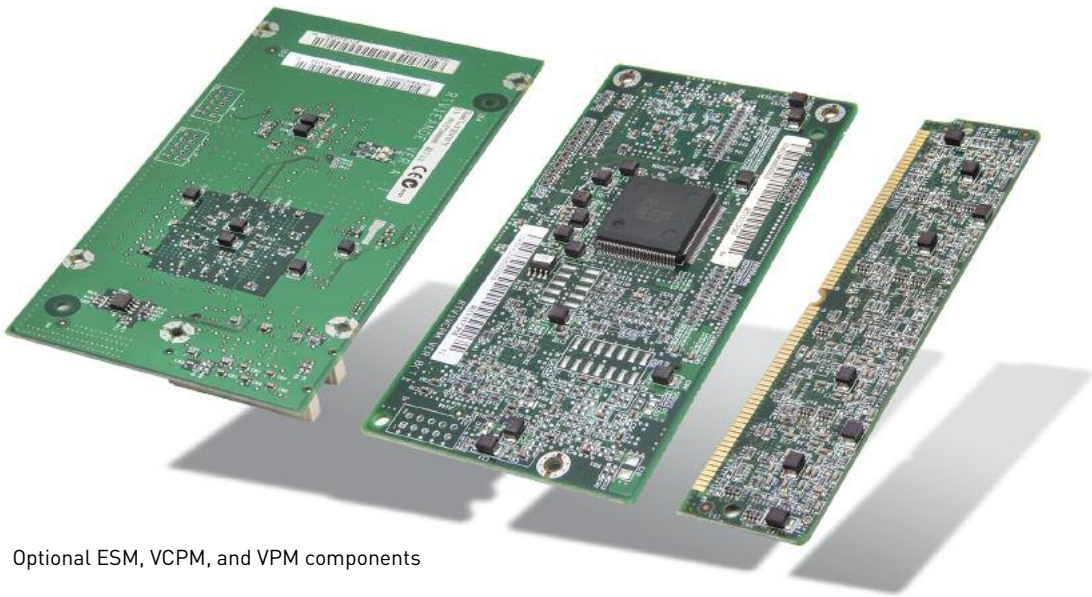
MSR 20-40
Height: 44.2 mm (1.7 in)
Width: 442.0 mm (17.2 in)
Depth: 407.1 mm (16.0 in)
Weight: 8 kg (17.6 lb)

ENVIRONMENTAL

Operating temperature: 0° to 40° C (32° to 104° F)

Storage temperature: -40° to 70° C (-40° to 158° F)

Humidity (operating and storage): 5% to 90% non-condensing



Optional ESM, VCPM, and VPM components

REGULATORY COMPLIANCE
CE (European Union)
UL (North America)
FCC (North America

EMC STANDARDS
FCC Part 15 (CFR 47) Class A
ICES-003 Class A
VCCI Class A
CISPR 22 Class A
EN 55022 Class A
AS/NZS CISPR22 CLASS A
EN 55024
CISPR 24
IEC 61000-3-2, 61000-3-3
EN 61000-6-1
ETSI EN 300 386 V1.3.3

SAFETY AGENCY CERTIFICATIONS
UL 60950-1: 2003
CAN/CSA C22.2 No 60950-1-03
IEC 60950-1 2001
EN 60950-1/A11: 2004
AS/NZS 60950
EN 60825-1 and 60825-2
FDA 21 CFR Subchapter J

TELECOM STANDARDS
FCC Part 68 (CFR 47)
IC CS-03

MTBF
MSR 20-20: 36 years (321,000 hours)
MSR 20-21: 35 years (312,000 hours)
MSR 20-40: 36 years (322,000 hours)

NETWORK MANAGEMENT
Tools
CLI
3Com Enterprise Management Suite
3Com Network Director
3Com Intelligent Management Center
3Com Router Manager

Embedded Management Features
SNMP v1, v2c, v3
Standard and enterprise MIBs
Telnet
SSH
Syslog
BIMS
RMON
Zero-touch deployment
Configuration rollback
NetStream packet statistics

LAN INTERFACE MODULES
LAN Modules (SIC/DSIC)
1-port 10/100 Ethernet
1-port 10/100/1000 Ethernet
4- and 9-port 10/100 Ethernet switching

WAN INTERFACE MODULES
WAN Modules (SIC/DSIC)
1-port enhanced serial sync/async
1-port ISDN-S/T
1-port ISDN-U
1-port Fractional E1
1-port Fractional T1
1-port ADSL 2+
1-port analog modem

VOICE MODULES
Voice Modules (SIC)
1- and 2-port voice FXS
1- and 2-port voice FXO
1-port E1 voice
1-port T1 voice

VOICE SUPPORT
Interface
FXS
FXO
E&M
E1VI/T1VI

Signaling
SIP
R2
DSSI
Q.sig
Digital E&M
H.323
H.225
H.245

CODECS
G.711A law
G.711U law
G.723R53
G.723R63
G.729a
G.729R8

Media Process
RTP/cRTP
IPHC
Voice backup

FAX
Fax

Other:
Voice RADIUS
Voice over Frame Relay (VoFR)

SPECIFICATIONS (CONTINUED)

LINK PROTOCOLS

LAN Protocols
Ethernet II
Ethernet SNAP
IEEE 802.3x VLAN
IEEE 802.1P
IEEE 802.1Q
IEEE 802.3ad LACP
IEEE 802.1w RSTP
IEEE 802.1s MSTP
IGMP snooping
GVRP
Port loopback
Port multicast suppression

WAN Protocols
PPP and Multilink PPP (MP)
PPPoE client and server
PPP/MP over FR
FR and Multilink FR (MFR)
Frame relay fragmentation, compression, and FR over IP
Frame Relay Traffic Shaping (FRTS)
ATM (IPoA, IPoEoA, PPPoA and PPPoEoA)
DCC and dialer watch
HDLC
LAPB
X25, X25 over TCP, X25 to TCP
X25 PAD, X25 hunt groups and X25 CUG
DLSW (V1.0/2.0)
ISDN and ISDN network
ISDN QSIG
MODEM

NETWORK PROTOCOLS

IP Service and Applications
TCP
UDP
ARP
IP option
IP unnumbered
Policy-based routing (unicast/multicast)
PING, traceroute
DHCP server, relay, and client
DNS client
DNS static
NQA
IP accounting
UDP helper
NTP
Telnet
TFTP client
FTP server, client

IP Routing
Static
RIP v1 and v2
OSPF
OSPF v3
BGP IV
IS-IS
IGMP
PIM-DM
PIM-SM
MBGP
MSDP

Non-IP
SNA/DLSw
IPX
SOT
NetStream

QUALITY OF SERVICE (QOS)

Layer 2 QoS
SP
WRED (Port)
CAR
LR
Flow-based QoS policy
Port-based mirroring
Flow-based mirroring
CoS-based Head of Line Blocking (HOLB) prevention
Packet remarking
Flow redirect
Flow accounting
Priority mapping
Port trust mode
Port priority
Flow filter
Flow control and backpressure
ACL

Traffic Policing
Committed Access Rate (CAR)
Line Rate (LR)

Congestion Management
FIFO
PQ
CQ
WFQ
CBQ
RTPQ

Congestion Avoidance
WRED/RED

Traffic Shaping
Generic

Other
FR QOS
MPLS QOS
MP QoS/LFI
cRTP/IPHC
ATM QOS
Sub-interface QoS

SPECIFICATIONS (CONTINUED)

NETWORK SECURITY AND RELIABILITY

Port-Based
PPPoE client and server
Portal
IEEE 802.1X

AAA
Local authentication
RADIUS
TACACS

Firewall
ASPF
Access Control Lists (ACL)
Filtering

Data Security
IKE
IPSec
Encryption accelerator
Portal

Other
L2TP
NAT/NAPT
PKI
RSA
SSH v1.5 and v2
SSL
URPF
GRE

Reliability
VRRP
Backup Center

WARRANTY AND OTHER SERVICES

One-year Limited Hardware Warranty
Limited Software Warranty for 90 days
90 days of telephone technical support
Refer to **www.3com.com/warranty** for details.

3Com MSR 20-40 Multi-Service Router

ORDERING INFORMATION

PRODUCT DESCRIPTION	3COM SKU
3Com MSR 20-20 Multi-Service Router	0235A324
3Com MSR 20-21 Multi-Service Router	0235A325
3Com MSR 20-40 Multi-Service Router	0235A326
Voice Processorsß	
3Com Multi-Service Router 32-Channel Voice Processor Module	0231A63L
3Com Multi-Service Router 24-Channel Voice Processor Module	0231A63M
3Com Multi-Service Router 16-Channel Voice Processor Module	0231A63N
3Com Multi-Service Router 8-Channel Voice Processor Module	0231A63P
3Com Multi-Service Router Voice Co-Processor Module	0231A64S
LAN Smart Interface Card (SIC) Modules	
3Com Router 1-Port 10/100 SIC	0231A53T
3Com Router 1-Port 10/100/1000 SIC	0231A61M
3Com Router 4-Port 10/100 SIC	0231A61N
3Com Router 9-Port 10/100 DSIC	0231A61P
WAN Smart Interface Card (SIC) Modules	
3Com Router 1-Port Analog Modem SIC	0231A49M
3Com Router 1-Port ADSL2+ SIC	0231A50Y
3Com Router 1-Port Fractional T1 SIC	0231A52S
3Com Router 1-Port Fractional E1 SIC	0231A90R
3Com Router 1-Port Enhanced Serial SIC	0231A56N
3Com Router 2-Port FXO SIC	0231A56P
3Com Router 1-Port FXO SIC	0231A56Q
3Com Router 2-Port FXS SIC	0231A56R
3Com Router 1-Port FXS SIC	0231A56S
3Com Router 1-Port ISDN-U SIC	0231A61A
3Com Router 1-Port ISDN-S/T SIC	0231A61H
3Com Router 1-Port E1 Voice SIC	0231A61Q
3Com Router 1-Port T1 Voice SIC	0231A61R

ß For use only in the MSR 20-40.

PRODUCT DESCRIPTION	3COM SKU
Encryption Options	
3Com Multi-Service Router Advanced Encryption Accelerator	0231A64Q
3Com Multi-Service Router Standard Encryption Accelerator	0231A64R
Cables	
3Com Router Auxilliary Cable	04021299
3Com Router E1 RJ45 Cable - 3m	04026104
3Com Router E1 BNC Cable - 20m	04040148
3Com Router E1 RJ45 Cable - 20m	04040150
3Com Router T1 Cable	04041054
3Com Router V.24 DTE Cable-Enhanced	04043589
3Com Router V.24 DCE Cable-Enhanced	04043590
3Com Router V.35 DTE Cable-Enhanced	04043591
3Com Router V.35 DCE Cable-Enhanced	04043592
3Com Router X.21 DTE Cable-Enhanced	04043593
3Com Router X.21 DCE Cable-Enhanced	04043594
3Com Router 8-Port E1 Cable	0404A00R
3Com Router 4-Port E1 IMA Cable	0404A042
3Com Router 4-Port T1 IMA Cable	0404A045
3Com Router T3/E3 Cable	04060353
3Com Router T1 Voice Cable	14080099
3Com Router E1 75-120 Ohm Conversion Cable	04026813

Need a single-box solution?

3Com MSR 20-1X Series Multi-Service Routers provide branch offices and small businesses a scalable single-box solution for WAN and wired and wireless LAN access, with voice, firewall and VPN gateway capabilities. On-board WAN and LAN ports deliver flexibility and minimized cost, and its module slot allows for additional WAN, LAN and voice interface choices.

Visit www.3com.com for more information about 3Com solutions.

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